Fitness for duty

Charlotte Morrison, Dan Basacik and Ann Mills
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Major crashes in the ‘80s and ‘90s

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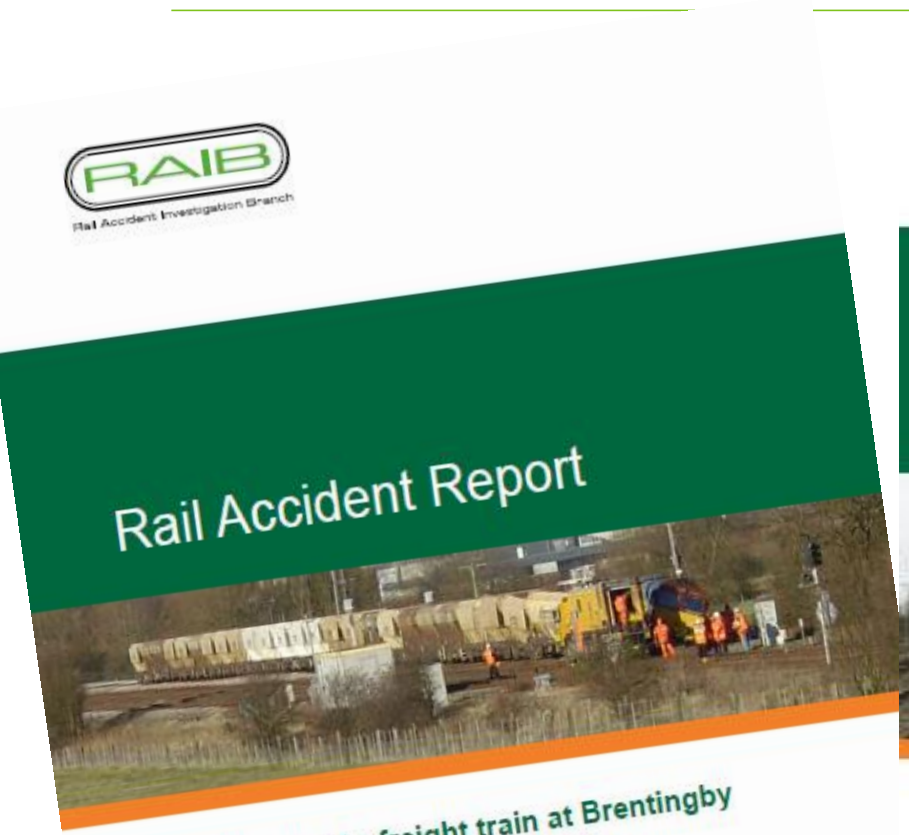
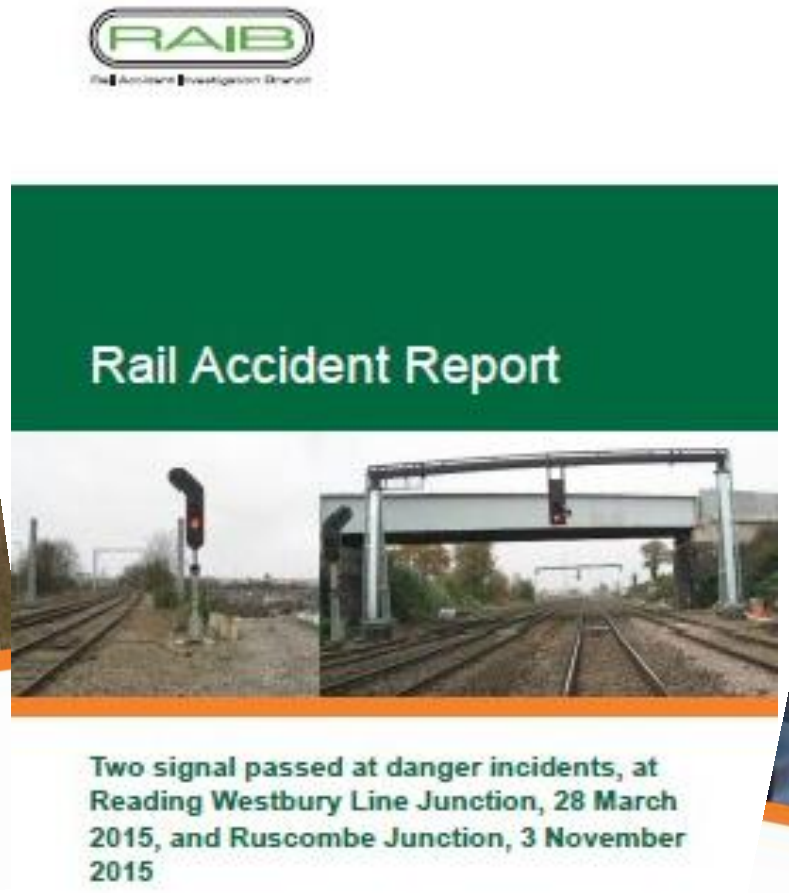
…and some significant incidents since then





Over-reliance on shift data to predict fatigue

DLN shift pattern:

- 7Days, 3Rest, 7Nights, 2Rest, 7Late, 2Rest
- Day shifts:8 hrs 45 (07:00-15:45)
- Night shifts: 9 hrs 45 (22:00-07:45)
- Late shifts: 7 hrs (15:00-22:30)
- Avg. 45.5 hr working week

5252 shift pattern:

- 5Days, 2Rest, 5Nights, 2Rest
- 12 hour shifts 7-7
- Avg. 60 hr working wk.

1 step model: 5252 is best

2 step model: DLN is best

Research carried out by Ruth Turner and team at TfL

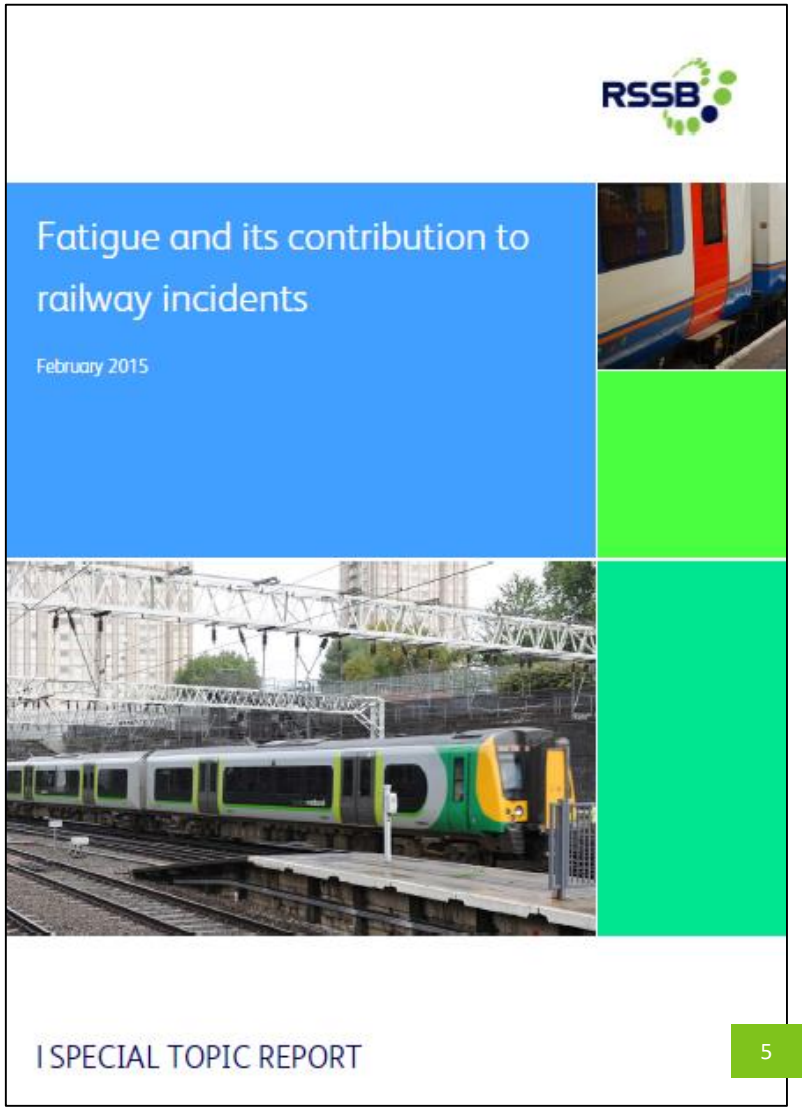
An analysis of fatigue as a cause of railway incidents

‘Analysis identified fatigue as a factor in 21% of … incidents.’

‘Home-life related fatigue was the most cited reason for the fatigue (40%)…

…followed by work-related fatigue (38%).’

‘Relevant fields for fatigue are often not completed in SMIS…’



Fitness for duty decisions

Will Jane be dangerously tired at any point in her shift?

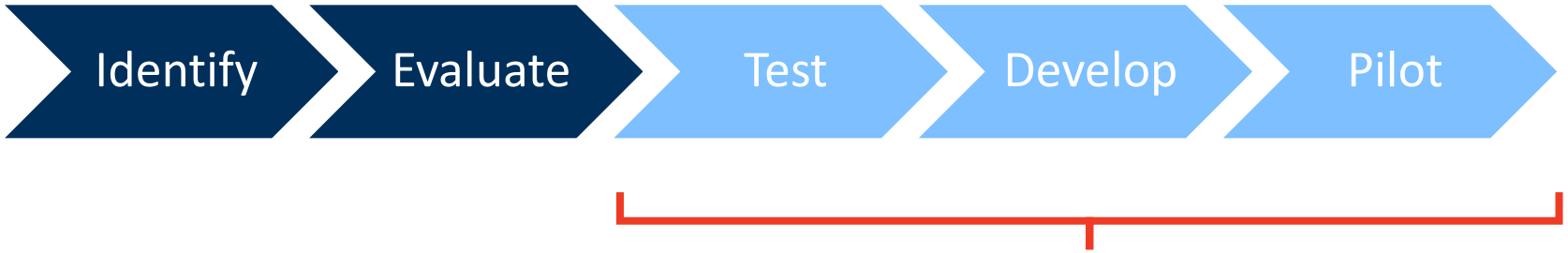
Dave
Jane's manager

Jane
Train driver

What was the overall aim?

This research aimed to investigate tools that had the potential to:

Help safety critical workers and their managers make better informed fitness for duty decisions in relation to fatigue risk



How did we do it?

What did industry representatives say they wanted?

- Consider previous sleep, time awake, shift pattern and other fatigue-risk factors
- Accurately distinguish between people who will feel tired and people who will not
- Quick, simple and accessible
- Not intrusive
- Cost effective
- Integrate with existing procedures
- Educational

Examples of types of tools evaluated

SA Ambulance Service
Fatigue Assessment

Step 1: *Determine the amount of sleep had in the last 24 hours.* SCORE

Sleep (hrs)	<2	3	4	5+
Points	12	8	4	0

8

Step 2: *Add this to the amount of sleep obtained in the preceding 24 hour period giving a total for the past 48 hours.*

Sleep (hrs)	<8	9	10	11	12+
Points	8	6	4	2	0

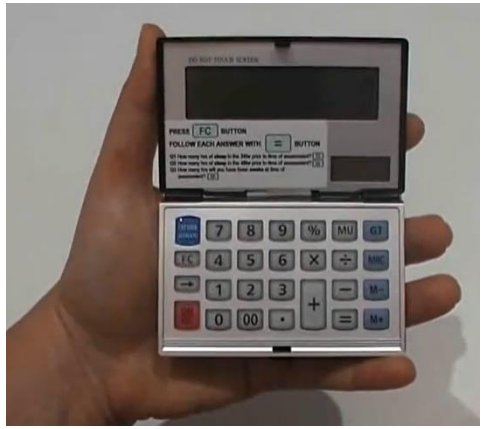
6

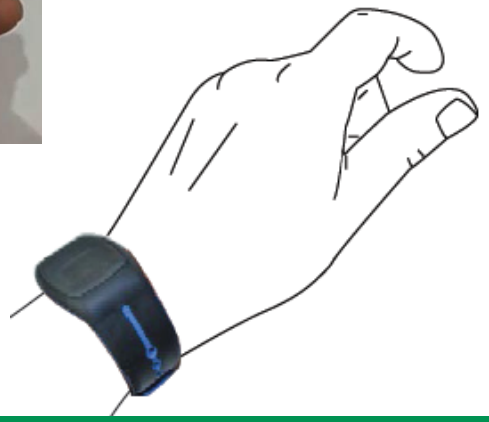
Step 3: *Assess how many hours you will have been awake since your last sleep at the end of your shift.*

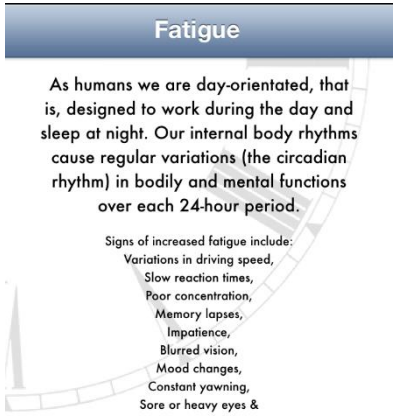
If total sleep in step 2 is greater than hours awake at end of step 3, points = 0. If less, add 1 point per hour awake greater than sleep in step 2.

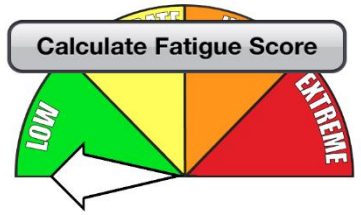
1

Step 4: ***Total your points to determine your score*** 15







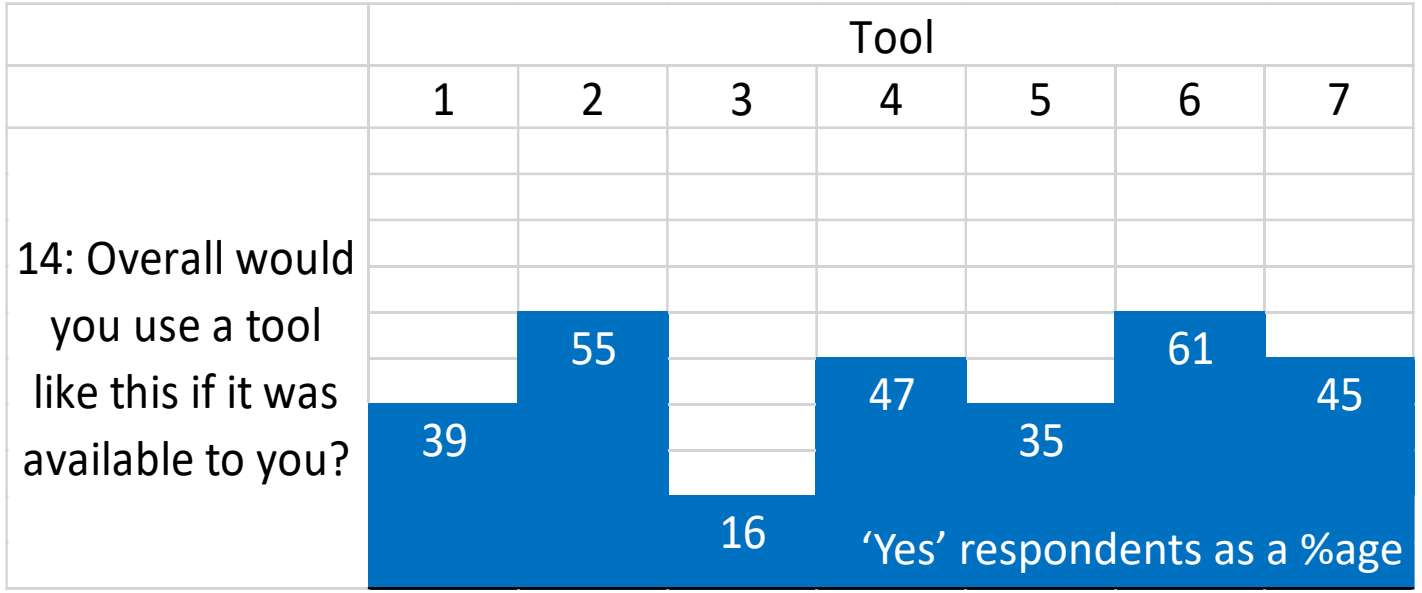


Fatigue Score Calculator

	Now	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00
Score:	4	4	4	4	4	5	6	7	8	9	10	11
	23:00	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00
	12	13	14	15	16	17	18	19	20	21	22	23

What did the workshop attendees tell us?

- Some tools performed better than others against different criteria
- Overall, an encouraging proportion of participants would use tools similar to those evaluated
- None of the tools suitable for immediate adoption



What's next?

- Evidence for some of the underlying models
- Evidence that using such a tool will make a difference
- A mix of tools/formats to suit different roles/people
- Suitably worded outputs
- The right guidance for front line staff and managers

….and of course the right culture

Thank you